REMARKS

[0003]   Applicant respectfully requests reconsideration and allowance of all of the claims of the application. Claims 37, 39-41, 72-74 and 76-82 are presently pending. Claims 37, 72, 74, 76 and 78-81 are amended herein. Claims 38 and 75 are withdrawn or cancelled herein. No new claims are added herein.

Statement of Substance of Interview

[0004]   The Examiner graciously talked with me—the undersigned representative for the Applicant—on January 6, 2008. Applicant greatly appreciates the Examiner's willingness to talk. Such willingness is invaluable to both of us in our common goal of an expedited prosecution of this patent application.

[0005]   During the interview, I discussed how the claims differed from the cited references, namely Warthen, Richards, Machiraju, Fung and AAPA. Without conceding the propriety of the rejections and in the interest of expediting prosecution, I also proposed several possible clarifying amendments.

[0006]   I understood the Examiner to tentatively concur with the proposed amendment to independent claim 37. Applicant herein amends the claims in the manner discussed during the interview. Accordingly, Applicant submits that the pending claims are allowable over the cited art of record for at least the reasons discussed during the interview.

Formal Request for an Interview

[0007]   If the Examiner's reply to this communication is anything other than allowance of all pending claims and the only issues that remain are minor or formal matters, then I formally request an interview with the Examiner. I encourage the Examiner to call me—the undersigned representative for the Applicant—so that we can talk about this matter so as to resolve any outstanding issues quickly and efficiently over the phone.

[0008]   Please contact me to schedule a date and time for a telephone interview that is most convenient for both of us. While email works great for me, I welcome your call as well. My contact information may be found on the last page of this response.

Claim Amendments

[0009]   Without conceding the propriety of the rejections herein and in the interest of expediting prosecution, Applicant amends claims 37, 72, 74, 76 and 78-81 herein.   Applicant amends claims to clarify claimed features. Such amendments are made to expedite prosecution and more quickly identify allowable subject matter.   Such amendments are merely intended to clarify the claimed features, and should not be construed as further limiting the claimed invention in response to the cited references.

[0010]   Support for the amendments to the claims is found in the specification at least at pages 11-12, 17, 19, 20-21 and 26-28.

Formal Matters

Drawings

[0011]   The Examiner objects to Figs. 8 and 9 for improper shading. Herewith, Applicant re-submits replacement drawings to address the informalities noted by the Examiner. Applicant further asserts, based on a thorough review of the replacement drawings, that the drawings illustrate proper shading and are in compliance with 37 C.F.R 1.83(a).

[0012]   Additionally, the Examiner objects to the drawings for not showing every feature specified in claims 37, 72 and 78. Applicant respectfully disagrees with the Examiner. For example, rules are illustrated in item 204 and receiving a query is illustrated in item 200 of Fig. 2. Segmenting is shown in item 400 of Fig. 4. Mappings are illustrated in Fig. 6. Aspects of parsing a query facilitated by confidence values and relevance learning are shown in Figs. 1 and 3 and in conjunction with the associated text regarding Figs. 1 and 3 found in the specification. Fig. 7 exemplifies the use of weighting factors, associated calculations using weighting factors, associated templates and answers.

[0013]   Based at least on these examples, as well as amendments to these claims, as shown above, the Applicant asserts that the drawings show every feature specified in claims 37, 72 and 78.

Claims

[0014]   The Examiner objects to claims 37 and 72 for grammatical and clarity issues. Herein, Applicant amends these claims, as shown above, to

address the objection made by the Examiner, and to expedite prosecution. The Applicant asserts that the Examiner's objection to claims 37 and 72 is moot and that these claims are in condition for allowance.

Substantive Matters

Claim Rejections under § 101

[0015]   Claims 37-41 and 72-82 are rejected under 35 U.S.C. § 101. Applicant respectfully traverses this rejection. Herein, Applicant amends these claims, as shown above, and as agreed to in the above referenced Examiner interview, to address the rejection made by the Examiner. Accordingly, Applicant asks the Examiner to withdraw these rejections.

[0016]   If the Examiner maintains the rejection of these claims, then Applicant requests additional guidance as to what is necessary to overcome the rejection.

Claim Rejections under § 112 1ST ¶

[0017]   Claims 37, 72 and 78 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Applicant respectfully traverses this rejection. Herein, Applicant amends these claims, as shown above, to address the rejection made by the Examiner. Accordingly, Applicant asks the Examiner to withdraw these rejections.

[0018]   Regarding amended claim 37, support can be found for:

- "rules associated with semantic classes" at least at page 19 of the Specification

- "segmenting the query" at least at page 17 of the Specification

- "coverage of … rules " at least at pages 12 and 19-20 of the Specification

- "using data in a log database as training data" at least at pages 21 and 28 of the Specification

- "confidence values represented continually" at least at page 27 of the Specification

- "parsed concepts selected from a set of concepts" at least at page 12 of the Specification and Fig. 7, item 702

- "processing the log database over time to provide relevance-feedback learning" at least at pages 7 and 15 of the Specification

- "derivation of weighting factors" at least at pages 5-6 of the Specification

- "using the derived weighting factors to calculate an associated correlation" at least at pages 23-24 of the Specification

[0019]   The support shown above for claim 37 is also applicable for showing adequate support in the Specification for claims 72 and 78, as amended. If the Examiner maintains the rejection of these claims, then Applicant requests additional guidance as to what is necessary to overcome the rejection.

Claim Rejections under § 103

[0020]   The Examiner rejects claims 37-41, 72-82 under § 103. For the reasons set forth below, the Examiner has not made a prima facie case showing that the rejected claims are obvious.

[0021]   Accordingly, Applicant respectfully requests that the § 103 rejections be withdrawn and the case be passed along to issuance.

[0022] The Examiner's rejections are based upon the following references alone or in combination:

- **Warthen:** *Warthen,* US Patent No. 6,584,464 (issued June 24, 2003);

- **Richards:** *Richards, et al.,* US Patent No. 5,995,921 (issued November 30, 1999);

- **Machiraju:** *Machiraju, et al.,* US Patent No. 6,028,601 (issued February 22, 2000);

- **Fung:** *Fung, et al.,* US Patent No. 6,687,689 (issued February 3, 2004); and'

- **AAPA:** pages 19-22 of Applicant's Admitted Prior Art (filed July 28, 2008):
  - o "Neural Computing Architectures-The Design of Brain-Like Machines", edited by Igor Aleksander, The MIT Press, Cambridge, Massachusetts, 1989, p. 76;
  - o "Artificial Intelligence", by S. Russell, P. Norvig, Prentice-Hall, Inc., 1995, pp. 573-577.

Overview of the Application

[0023] The Application describes a technology for a search engine architecture that is designed to handle a full range of user queries, from complex sentence-based queries to simple keyword searches (Application, Abstract).

Cited References

[0024] The Examiner cites Warthen as the primary reference in the obviousness-based rejections. The Examiner cites Richards, Machiraju, Fung and AAPA as secondary references in the obviousness-based rejections.

Warthen

[0025] Warthen describes a technology for an information server that directs users to desired sources of information where the desired sources of information are determined, at least in part, based on user input (Warthen, Abstract).

Richards

[0026] Richards describes a technology for a help interface capable of receiving user-defined queries in a natural language and selecting the most appropriate answer from a plurality of potential answers (Richards, Abstract).

Machiraju

[0027] Machiraju describes a technology where a user enters input, or a question in natural language form, and information is retrieved. A questions database is coupled to the input interface and contains questions which are comparable to the input and which the source retrieves in response to an input. An information source is coupled to the input interface and contains information which is relevant to retrieved questions. A searcher is coupled to the input

interface for searching the information source for information which is relevant to the input. Information is ranked according to the entered query. A user's question is stored and linked to answers in the questions database (Machiraju, Abstract).

Fung

[0028] Fung describes a technology for a system and associated methods to identify documents relevant to an inputted natural-language user query (*Fung*, Abstract).

AAPA

[0029] AAPA describes a technology for iterative training of a neural network, wherein the neural network utilizes a non-linear activation function (pages 19-22 of Applicant's Admitted Prior Art filed July 28, 2008).

Obviousness Rejections

Lack of *Prima Facie* Case of Obviousness (MPEP § 2142)

[0030]   Applicant disagrees with the Examiner's obviousness rejections. Arguments presented herein point to various aspects of the record to demonstrate that all of the criteria set forth for making a prima facie case have not been met.

Based upon Warthen, Richards, Machiraju and AAPA

[0031]   The Examiner rejects claims 37-41 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Warthen, Richards, Machiraju and AAPA.   Applicant respectfully traverses the rejection of these claims and asks the Examiner to withdraw the rejection of these claims.

Amended Independent Claim 37

[0032] Applicant submits that the combination of Warthen, Richards, Machiraju and AAPA does not teach or suggest at least the following features and elements as recited in this claim (in part, with emphasis added):

- "defining *rules associated with semantic classes* of a grammar"
- "generating a parsed output by parsing parsable segments of the query, wherein the selection of the parsed output is based on a *coverage of one or more of the rules* against the query, the coverage being determined based on probabilities learned from using data in a log database as training data, the probabilities comprising **confidence values** *represented continually and associated with each item in the one or more of the rules*, wherein the parsed output comprises one or more parsed concepts selected from a set of concepts, wherein the one or more parsed concepts comprise at least one of a parse tree and a partially parsed fragment"
- "analyzing the log database to determine a relevance of previously stored frequently asked questions to the query, the determination of the relevance comprising:"
  - "processing the log database over time to provide relevance-feedback learning to facilitate a derivation of **weighting factors** that indicate how relevant each previously stored frequently asked question is to each of the ***set of concepts***"
  - "using the derived weighting factors to calculate an *associated correlation between each of the previously stored frequently asked questions and the one or more parsed concepts*, whereby each associated correlation indicates how relevant each previously stored frequently asked question is to the query"

[0033] The Examiner fails to assert that the combination of Warthen, Richards, Machiraju and AAPA teach or suggest "generating a parsed output ... based on a coverage of ... rules against the query, the coverage being determined based on probabilities learned from using data in a log database as training data, the probabilities comprising confidence values represented continually and associated with each item in the ... rules ... wherein the parsed output comprises ... parsed concepts selected from a set of concepts" as recited in this claim, as amended.

[0034] As to Warthen and Machiraju, the Applicant asserts that they do not disclose or suggest, nor has the Examiner relied upon them, for the use of any confidence values associated with rules. Instead, the Examiner relies on Richards (see Action, pp. 8-10) for the features of determining "confidence values ... associated with each item in ... the rules" as recited in this claim, and cites Richards, Figures 5A-C. Figure 5A is shown below for convenience:
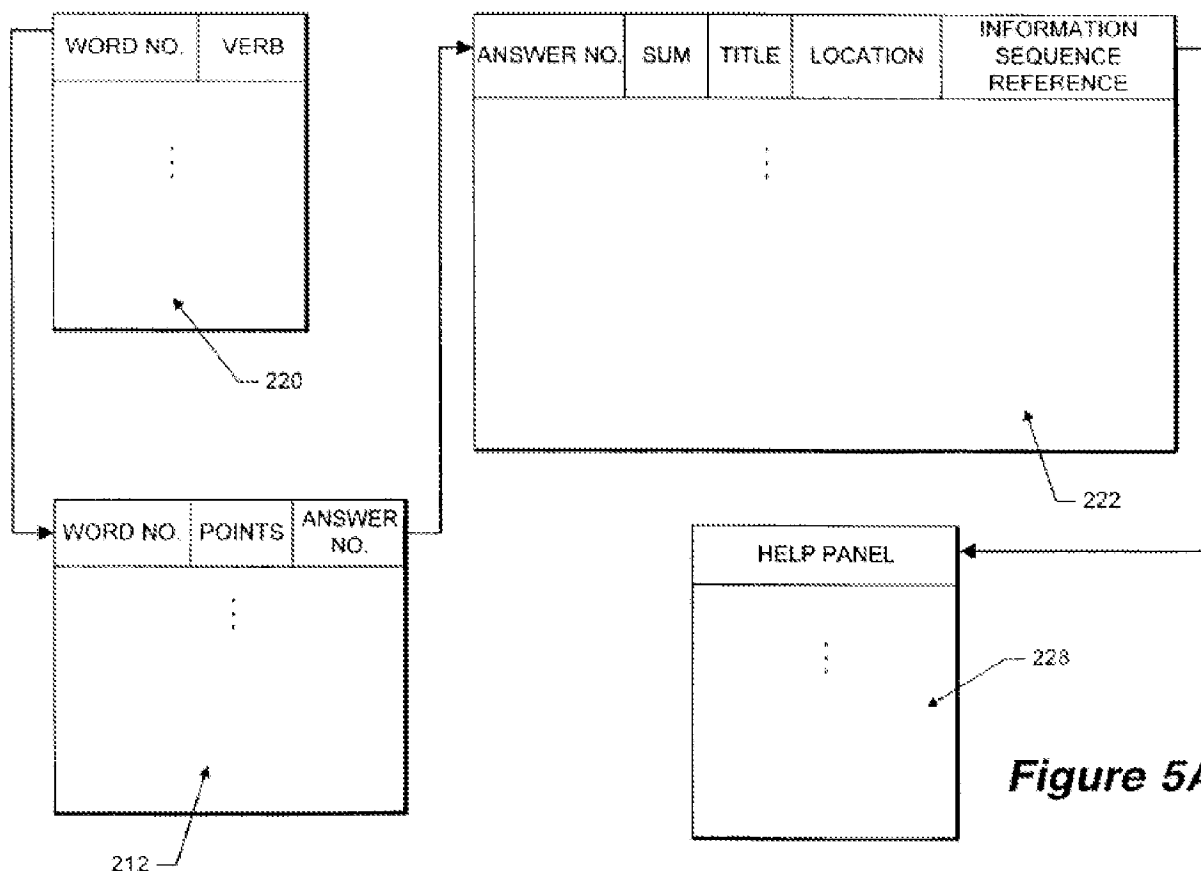
WORD NO.	VERB
:	

~ 220

ANSWER NO.	SUM	TITLE	LOCATION	INFORMATION SEQUENCE REFERENCE
:				

~ 222

WORD NO.	POINTS	ANSWER NO.
:		

212 ⌐

HELP PANEL
:

~ 228

Figure 5A

[0035]   Regarding Figure 5A, Richards discloses the following:

FIG. 5A illustrates schematically the format and content of found word array 220, rule set 212, answer array 222, and help files 228, as well as references to the interrelationship of selected entries contained therein. Found word array 220 is used to store information relative to the base words extracted from the user-defined query. Rule set 212, serves as the primary mechanism for matching the base words from found word array 220 to all possible related answers. Accordingly, each entry of rule set 212 matches an answer number with a word number and provides a point value which will be used to calculate a cumulative score for the answer. Answer array 222 is used to maintain the cumulative values for all answers, as well as other information relating to the answer. Specifically, each entry of answer array 222 includes an answer number field, a sum

field, representing the total cumulative value of points scored by the answer, an answer title field, a location field, and an information segment reference field (Richards, Col. 6, l. 64 - Col. 8, l. 7).

[0036] In other words, as shown above, Richards' Figure 5A shows that a user input query is parsed into a *list of **base words*** indexed by a word number stored in word array 220. Rule set 212 indicates that each base word in the list is associated with ***points*** that indicate how strongly each base word in the list is associated with an answer. The answer array 222 shows each answer ranked with a cumulative ***sum*** based on the sum of the points for each base word. So in summary, the point and sum disclosed by Richards have to do with **associating base words to answers** and not with parsing the query into base words.

[0037] Richards does not make up for the deficiency of Warthen, Machiraju and AAPA because Richards does not disclose or teach the claimed "**generating a parsed output** … based on …rules … comprising confidence values" because as shown above, Richards parses the query into base words that are not generated using any rules in the rule set disclosed by Richards, or for that matter, any other rules. Instead, Richards associates base words to answers using the rule set, so Richards does not disclose, teach or suggest using rules to generate a "parsed output … based on …rules" as recited in this claim. Furthermore, the "rules" taught by Richards are not "associated with semantic classes of a grammar" as recited in this claim, as amended, because the rules taught by Richards relate to how well each base word is associated with each answer based on points.

[0038]   Additionally, regarding the claimed "confidence values", the Examiner further cites (Action, pp. 8-9) Richards' ***points*** (see Fig. 5A, item 212 shown above) and ***sum*** (Fig. 5A, item 222 shown above). Regarding how these points are determined, Richards discloses the following (emphasis added):

> Each entry of rule set 212 contains, **inherently**, the comparative relationship between a specific base word and a candidate answer. For example, if a specific base word, as identified by the corresponding word number field, is very likely related to a specific answer number, the value of the point field will be set positively … The actual point value scheme may be implemented with integer values in any increments or multiples desired … **at the discretion of the programmer** (Richards, Col. 7, l. 26-38).

[0039]   As shown above, Richards suggests that the points are inherent and potentially determined by a programmer and not "learned". Likewise, as shown above, the sum that relates base words to answers is based on a summation of these [inherent] points. Neither the points nor sum disclosed by Richards has any relationship to the "confidence values" recited in this claim because the points and sum have nothing to do with parsing Richards' input query into base words. Additionally, Richards' base words are not determined using "data in a log database as training data", and the rules disclosed by Richards are not associated with "semantic classes of a grammar" as recited in this claim, as amended. Furthermore, Richards does not teach or suggest that the point value scheme is analogous to "probabilities comprising *confidence values represented* **continually**" as recited in this claim, as amended, because Richards teaches that the point value scheme is binary (i.e., the point field will be set positively) or that the actual point value scheme may be implemented with integer values in

any increments or multiples desired, as shown above (Col. 7, l. 26-38). Therefore, Richards does not make up for the deficiency of Warthen, Machiraju and AAPA regarding at least the claimed features of "confidence values".

[0040] As to AAPA, the Examiner indicates (Action, p. 9) the following with regard to this claim:

Warthen does not teach "*wherein the derivation of at least one of the confidence values associated with items in the rules is facilitated by iterative training of a neural network using data from the log database as training data.*" AAPA does, however, see e.g. Fig. 19.11 and p. 21, "The generic neural network learning method: adjust the weights until predicted output values O and true values T agree." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because AAPA's teachings would have allowed Warthen's method to gain a well-known means for training a system, see AAPA p. 19.

Warthen does not teach "*wherein the neural network utilizes a non-linear activation function.*" AAPA does, however, see p. 20, "In computer simulations, the solution can only be found by iterative techniques, because of the non-linearity of the functions S~ and the existence of feedback." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because AAPA's teachings would have allowed Warthen's method to gain a well-known means for training a system, see AAPA p. 19.

[0041] The Applicant provided the AAPA evidence above to support the inherency of the claimed "**iterative**" training associated with a neural network utilizing a non-linear transfer function. This evidence was merely provided to

assist the Examiner in understanding this inherency. Since these clarifications have not appeared to progress prosecution, Applicant has canceled the features of "iterative training of a neural network" from claim 37, as these features are not essential to clarify distinguishing features of this claim.

[0042] Additionally, the Examiner fails to show that Warthen, Richards, Machiraju and AAPA teach or suggest "processing the log database ... to facilitate derivation of **weighting factors** that indicate how relevant each ... frequently asked question is to each of **the set of concepts**" and "**using the derived weighting factors** to calculate an associated correlation between ... frequently asked questions and ... **parsed concepts**" as recited in this claim, as amended. The Applicant asserts that the combination of Warthen, Richards, Machiraju and AAPA does not teach or suggest these features recited in amended claim 37.

[0043] As to Warthen, it states the following:

> Parser 155 identifies the set of possible syntactic structures that could represent the question(s) being asked and passes the structure set to normalizer 160, with each syntactic structure representing one possible syntactic interpretation of the question (Warthen, Col. 5, l. 36-40);

> Normalizer 160 reforms the syntactic structures into canonical forms by replacing synonyms with a canonical term (Warthen, Col. 5, l. 45-47);

> Matcher 165 then matches the normalized structure set against semantic net snapshot 40. The semantic net is changing as more questions are being asked and the semantic net is being refined, so

an information server will often use a snapshot of the state of the semantic net at one point in time (Warthen, Col. 5, l. 59-64);

By matching the normalized structure set against a semantic net … matcher 165 obtains a list of instantiated questions (template questions with parameter values identified) and provides those to APE 32. Since the list is of instantiated questions that are based on template questions, they will be found in question-answer mapping table 42 and APE 32 obtains the answers that match the questions (see Warthen, Col. 6, l. 1-8);

FIG. 7 illustrates how a semantic net 200 might be organized to be used to map keywords to questions. Once keywords are mapped to questions, the questions are mapped to answers using question-answer mappings 202. A small portion 204 of semantic net 200 is shown in detail in FIG. 8 (Warthen, Col. 6, l. 1-8).

[0044]   As shown above, Warthen does not teach or suggest deriving any weighting factors that indicate any relevancy between any "frequently asked question" and any "set of concepts". Furthermore, Warthen does not teach or suggest then using such derived "weighting factors to calculate an associated correlation between each of the … frequently asked questions and … parsed concepts" as recited in this claim, as amended. In fact, Warthen does not teach or suggest deriving any weighting factors at all.

[0045]   As to Machiraju, it teaches that (emphasis added):

[A]s a user types a question in query field 210, the invention executes an algorithm to remove all stopwords in the question and to stem the remaining words. The invention compares the stemmed words typed in query field 210 to the stemmed words stored in

questions database 220. *If a word in the user's query matches a word in a question in the questions database 220, then one point is assigned for the question in questions database 220. If other words in the user's query match words in the database question, then additional points are assigned. The matched questions from questions database 220 are output in question list 215 starting with the question having the most points* (Machiraju, Col. 5, l. 29-39).

[0046]   As shown above, Machiraju does not teach or suggest deriving any weighting factors that indicate any relevancy between any "frequently asked question" and any "set of concepts" and then using such derived "weighting factors to calculate an associated correlation between each of the ... frequently asked questions and ... parsed concepts" as recited in this claim, as amended, because Machiraju merely assigns points based on how many stemmed words in a query match stemmed words in questions. Machiraju is missing both the claimed features of deriving "weighting factors" for a "set of concepts" and then using the "weighting factors" to calculate any correlation between any "questions and concepts".

[0047]   As to Richards, as shown above, it teaches inherently assigning points that relate base words to answers, and calculating a sum for answers that relate to base words parsed from a query (see above, Richards, Col. 7, l. 18 – Col. 8, l. 7). Richards does not teach or suggest deriving any weighting factors that "indicate how relevant each ... frequently asked question is to each of the **set of concepts**" and "using the ... [derived] weighting factors to calculate ... correlation between ... questions and ... **parsed concepts**" as recited in this

claim, as amended, because Richards teaches using points and cumulative sums to relate base words directly to answers, not concepts to questions.

[0048] As to AAPA, the Examiner has relied on that reference for **"iterative"** training associated with a neural network utilizing a non-linear transfer function. Applicant has canceled the features of "iterative training of a neural network", as these features are not essential to clarify distinguishing features of this claim.

[0049] To summarize, the combination of Warthen, Richards, Machiraju and AAPA does not teach or suggest all of at least the following features and elements as recited in this amended claim:

1. "generating a parsed output based on a coverage of [semantic class] rules … based on … learned … confidence values … wherein the parsed output comprises … parsed concepts selected from a set of concepts" **and**

2. "processing the log database [to derive] weighting factors that indicate how relevant each … frequently asked question is to each of the *set of concepts*" **and**

3. "using the derived weighting factors to calculate an associated correlation between each of the … frequently asked questions and the … *parsed concepts*".

[0050] As shown above, the combination of Warthen, Richards, Machiraju and AAPA does not teach or suggest all of the elements and features of this claim. Thus, the combination of Warthen, Richards, Machiraju and AAPA does not render this claim obvious. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

Based upon Warthen, Richards, Machiraju and Fung

[0051] The Examiner rejects claims 72-82 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Warthen, Richards, Machiraju and Fung. Applicant respectfully traverses the rejection of these claims and asks the Examiner to withdraw the rejection of these claims.

Amended Independent Claim 72

[0052] Applicant submits that the combination of Warthen, Richards, Machiraju and Fung does not teach or suggest at least the following features and elements as recited in this claim (in part, with emphasis added):

- "wherein a produced parse tree and a produced partially-parsed fragment represent a collection of concepts, the collection of *concepts selected based on coverage of one or more semantic class rules* against the search query, the coverage determined based on **learned** *confidence values associated with each item in the one or more of the semantic class rules*, the confidence values learned by using data in a log database as training data"
- "determining a relevance of a list of frequently asked questions (FAQ) to the search query, the determination of the relevance comprising:"
  - "processing a log database to derive *weighting factors* that indicate how relevant each previously stored frequently asked question is to each of the *set of concepts*"
  - "using the derived weighting factors to calculate an associated correlation between each of the previously stored frequently asked questions and the *collection of concepts*, whereby each associated correlation indicates how relevant each previously stored frequently asked question is to the search query"

[0053]   The Examiner fails to assert that Warthen, Richards, Machiraju and Fung teach or suggest the following features and elements as recited in claim 72, as amended:

1. "a produced parse tree and a produced partially-parsed fragment represent a ... collection of concepts selected based on coverage of ... semantic class rules ... based on learned confidence values associated with each item in the ... semantic class rules" **and**

2. "processing a log database to derive weighting factors that indicate how relevant each ... question is to each of the *set of concepts*" **and**

3. "using the derived weighting factors to calculate an associated correlation between each of the ... questions and the *collection of concepts*".

[0054]   Without needlessly repeating the reasons and evidence presented above in support of claim 37, the Applicant asserts that the combination of Warthen, Richards, Machiraju and Fung does not teach or suggest the elements and features of amended claim 72, as enumerated in items 1-3 above.

[0055]   In short, the Examiner relies on Richards (Action, p. 15) for the "confidence values" as recited in claim 72. As shown above in support of claim 37, Richards does not teach or suggest selecting concepts "based on coverage of ... semantic class rules ... based on learned confidence values" as recited in this claim, as amended, because Richards discloses using a rule set to associate base words parsed from a query to answers, not selecting concepts "based on rules". As shown above, Richards does not teach or suggest using the rule set or any other rules to parse the query into a parsed output of base words.

[0056] Additionally, the combination of Warthen, Richards, Machiraju and Fung does not teach or suggest "processing a log database to derive weighting factors that indicate how relevant each ... question is to each of the set of concepts" **and** "using the derived weighting factors to calculate an associated correlation between each of the ... questions and the collection of concepts" as recited in this claim, as amended. As shown above in support of claim 37, Warthen does not teach or suggest deriving any weighting factors at all. Machiraju merely assigns points based on how many stemmed words in a query match stemmed words in questions. Richards teaches using points and cumulative sums to relate base words directly to answers, not concepts to questions.

[0057] As to Fung (Action, p. 14), it is only relied upon for "wherein at least one of the individual character strings comprises a **single character**" as recited in this claim. Fung does not disclose any features of the "learned confidence values" or "weighting factors" as recited in this claim, as amended.

[0058] Therefore, for at least these reasons as shown above, the combination of Warthen, Richards, Machiraju and Fung does not teach or suggest all of the elements and features of this claim. Thus, the combination of Warthen, Richards, Machiraju and Fung does not render this claim obvious. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

Amended Independent Claim 78

[0059] Applicant submits that the combination of Warthen, Richards, Machiraju and Fung does not teach or suggest at least the following features and elements as recited in this claim (in part, with emphasis added):

- "a log analyzer ... that utilizes data in a log database to:"
  - "adapt how the natural language parser module selects the parsed result based on *learned confidence values* associated with coverage of semantic rules against the search query, wherein the confidence values are learned utilizing the data in the log database as training data"
  - "derive *weighting factors* that indicate a degree of correlation between each of a list of frequently asked questions and each of the *set of concepts*"
  - "use the derived *weighting factors* to determine a relevance between each of the list of frequently asked questions and the associated *collection of concepts*"

[0060] The Examiner fails to assert that Warthen, Richards, Machiraju and Fung teach or suggest the following features and elements as recited in claim 78, as amended:

1. "adapt how the natural language parser module selects the parsed result based on *learned confidence values* associated with coverage of semantic rules against the search query" **and**

2. "derive *weighting factors* that indicate a degree of correlation between each of a list of frequently asked questions and each of the *set of concepts*" **and**

3. "use the derived *weighting factors* to determine a relevance between each of the list of frequently asked questions and the associated *collection of concepts*".

[0061] Without needlessly repeating the reasons and evidence presented above in support of claims 37 and 72, the Applicant asserts that the combination of Warthen, Richards, Machiraju and Fung does not teach or suggest at least the elements and features of amended claim 78, as enumerated in items 1-3 above.

[0062] In short, the Examiner relies on Richards (Action, p. 20) for the "confidence values associated with ... rules" as recited in claim 78. As shown above in support of claims 37 and 72, Richards does not teach or suggest selecting parsed results "based on *learned confidence values* associated with coverage of semantic rules against the search query" as recited in this claim, as amended, because Richards discloses using a rule set to associate base words parsed from a query to answers, not selecting parsed results "based on rules". As shown above, Richards does not teach or suggest using the rule set or any other rules to parse the query into base words.

[0063] Additionally, the combination of Warthen, Richards, Machiraju and Fung does not teach or suggest deriving "*weighting factors* that indicate a degree of correlation between each of a list of frequently asked questions and each of the *set of concepts*" **and** using "the derived *weighting factors* to determine a relevance between each of the list of frequently asked questions and the associated *collection of concepts*" as recited in this claim, as amended. As shown above in support of claims 37 and 72, Warthen does not teach or suggest deriving any weighting factors at all. Machiraju merely assigns points based on how many stemmed words in a query match stemmed words in questions. Richards teaches using points and cumulative sums to relate base words directly to answers, not concepts or parsed results to questions.

[0064] As to Fung (Action, p. 14), it is only relied upon for "a segmentation module ... that segments a search query into one or more individual character strings" as recited in this claim, and does not disclose any features of the "confidence values associated with ... rules" or "weighting factors" as recited in claim 78, as amended.

[0065] Therefore, for at least these reasons as shown above, the combination of Warthen, Richards, Machiraju and Fung does not teach or suggest all of the elements and features of this claim. Thus, the combination of Warthen, Richards, Machiraju and Fung does not render this claim obvious. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

Dependent Claims

[0066] In addition to its own merits, each dependent claim is allowable for at least the same reasons that its base claim is allowable. Applicant requests that the Examiner withdraw the rejection of each dependent claim where its base claim is allowable.

Conclusion

[0067] All pending claims are in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the application. If any issues remain that prevent issuance of this application, the **Examiner is urged to contact me before issuing a subsequent Action**. Please call or email me at your convenience.

Respectfully Submitted,

Lee & Hayes, PLLC
Representatives for Applicant

/ E. John Fain /   Dated: 1/8/2009

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